
grg-grgdata Documentation

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1.1 Overview

grg-grgdata is a minimalist python package for working with of **GRG** network data files.

The primary entry point of the library is `grg_grgdata.cmd` module, which contains the methods for GRG data validation.

1.2 Installation

Simply run:

```
pip install grg-grgdata
```

1.3 Testing

grg-grgdata is designed to be a library that supports other software. It is not immediately useful from the terminal. However, you can test the validation functionality from the command line with:

```
python -m grg_pssedata.cmd <path to GRG data file>
```

If this command is successful, you will see a message indicating that the given data is a valid GRG file printed to the terminal.

2.1 grg_grgdata.io module

`grg_grgdata.io.abstract_value_to_string(abs_value)`

`grg_grgdata.io.build_cli_parser()`

`grg_grgdata.io.dict_to_list(name, data, keys)`

`grg_grgdata.io.main(args)`

reads a matpower or grg case files and processes them based on command line arguments.

Parameters `args` – an argparse data structure

`grg_grgdata.io.parse_grg_case_file(grg_file_name)`

opens the given path and parses it as json data

Parameters `grg_file_name` (*str*) – path to the a json data file

Returns a dictionary case

Return type Dict

`grg_grgdata.io.print_json(grg_data, selection=None)`

`grg_grgdata.io.print_json_selection(data, prefix, selection)`

`grg_grgdata.io.print_tabular_summary(grg_data)`

`grg_grgdata.io.print_tabular_summary_network(grg_data)`

`grg_grgdata.io.value_to_string(value)`

2.2 grg_grgdata.cmd module

`grg_grgdata.cmd.active_voltage_points(grg_data, switch_status={})`

`grg_grgdata.cmd.apply_assignment(network_data, pointer_string, value)`

```
grg_grgdata.cmd.build_cli_parser()
grg_grgdata.cmd.bus_voltage_points(grg_data)
grg_grgdata.cmd.check_flow_limit_bound(identifier, ac_line_data, ad_lookup, vl_lookup,
                                         per_unit)
grg_grgdata.cmd.check_property(status, feedback)
grg_grgdata.cmd.check_voltage_level(identifier, ac_line_data, voltage_level_lookup)
grg_grgdata.cmd.collapse_voltage_points(grg_data, switch_status={})
grg_grgdata.cmd.components_by_type(grg_data)
grg_grgdata.cmd.flatten_network(grg_data, transformation_id)
grg_grgdata.cmd.isolated_voltage_points(grg_data, switch_status={})
grg_grgdata.cmd.lookup_network(grg_data, transformation_id)
grg_grgdata.cmd.lookup_pointer(grg_data, pointer_string)
grg_grgdata.cmd.main(args)
    reads a GRG case file and runs the GRG data validation and parameter checks

    Parameters args – an argparse data structure

grg_grgdata.cmd.print_err()
    print(value, ..., sep=' ', end='n', file=sys.stdout)

    Prints the values to a stream, or to sys.stdout by default. Optional keyword arguments: file: a file-like object
    (stream); defaults to the current sys.stdout. sep: string inserted between values, default a space. end: string
    appended after the last value, default a newline.

grg_grgdata.cmd.validate_grg(grg_data)
grg_grgdata.cmd.validate_grg_ac_line(identifier, ac_line_data, per_unit)
grg_grgdata.cmd.validate_grg_bus(identifier, bus_data, per_unit)
grg_grgdata.cmd.validate_grg_dc_line(identifier, dc_line_data)
grg_grgdata.cmd.validate_grg_flow_limit(identifier, limit_name, comp_data)
grg_grgdata.cmd.validate_grg_flow_limit_bound(identifier, limit_name, comp_data,
                                              limit_bound)
grg_grgdata.cmd.validate_grg_generator(identifier, gen_data)
grg_grgdata.cmd.validate_grg_intertie(identifier, intertie_data)
grg_grgdata.cmd.validate_grg_load(identifier, load_data)
grg_grgdata.cmd.validate_grg_parameters(grg_data)
grg_grgdata.cmd.validate_grg_shunt(identifier, shunt_data)
grg_grgdata.cmd.validate_grg_switch(identifier, switch_data)
grg_grgdata.cmd.validate_grg_synchronous_condenser(identifier, sync_cond_data)
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grg_grgdata.cmd.validate_grg_two_winding_transformer(identifier, twt_data, per_unit)
grg_grgdata.cmd.validate_pointer(pointer_string, grg_data, component_lookup, context=[], as-
                                signment=False)
grg_grgdata.cmd.voltage_level_by_voltage_point(grg_data)
```



```
grg_grgdata.cmd.votlage_level_lookup(grg_data)
grg_grgdata.cmd.walk_assignments(grg_data)
grg_grgdata.cmd.walk_components(grg_data)
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grg_grgdata.cmd.walk_time_series_assignments(grg_data)
grg_grgdata.cmd.walk_voltage_links(grg_data)
```

2.3 grg_grgdata.exception module

a collection of all grg_grgdata exception classes

exception grg_grgdata.exception.GRGDataException

Bases: exceptions.Exception

root class for all GRGData Exceptions

exception grg_grgdata.exception.GRGDataValidationError

Bases: *grg_grgdata.exception.GRGDataException*

for errors that occur while attempting to validate the correctness of a parsed GRG data file

exception grg_grgdata.exception.GRGDataWarning

Bases: exceptions.Warning

root class for all GRG data warnings

2.4 grg_grgdata.struct module

2.5 Module contents

a package for reading and writing of grid data files

CHAPTER 3

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